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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LUC LEMMENS, SJAAK SCHEL,
KOEN VERMOLEN, SIMON ANNE DE MOLINA,
WALTER SPIRITUS, and BART VANDEWAL

Appeal 2009-1081
Application 10/775,881
Technology Center 3600

Decided:[1] March 10, 2009

Before WILLIAM F. PATE, III, LINDA E. HORNER, and
KEN B. BARRETT, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Luc Lemmens et al. (Appellants) seek our review under 35 U.S.C. § 134 from the final rejection of claims 1 through 6. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

The Application before us was the subject of a previous decision of the Board, *Ex parte Lemmens*, No. 2006-1447, 2006 WL 3101723 (BPAI 2006).

SUMMARY OF THE DECISION

We REVERSE.

THE INVENTION

Appellants' claimed invention pertains to a vehicle shock absorber, or a damper, used in conjunction with an air spring (as opposed to a conventional leaf or coil spring). (Spec. 1, ¶¶ [0001], [0002].) A valve in the damper receives a pressure signal from the air spring and regulates the fluid flow through the system such that the damping characteristics are proportional to the pressure signal. (*See id.* at 1, ¶[0001]; *id.* at 2, ¶ [0004].) Claim 1, reproduced below, is representative of the subject matter on appeal.

1. An air pressure proportional damper comprising:

a container having a first chamber and a second chamber;

a piston rod slidingly disposed in the first chamber of the container;

a piston attached to the piston rod, the piston being in sliding engagement with walls of the first chamber;

a valve disposed between the first chamber and the second chamber, the valve regulating fluid flow between the first chamber and the second chamber through a first fluid

passage and a second fluid passage separate from said first fluid passage;

a membrane movable between a first position where the second fluid passage is open and a second position where the second fluid passage is closed to prevent fluid flow through the second fluid passage, the membrane defining the first fluid passage as an aperture extending through the membrane to allow a specified amount of fluid flow between the first chamber and the second chamber through the first passage when the membrane is in the second position;

a pressure signal supplied from an air spring to the valve;

wherein the valve regulates fluid flow from the first chamber to the second chamber proportional to the pressure signal.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

de Molina	US 5,725,239	March 10, 1998
Vermolen	US 5,924,528	July 20, 1999

The following rejections are before us for review:

1. Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement; and

2. Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Vermolen and de Molina.

We do not reach the Examiner's objection to the drawings (Ans. 3), because this matter is reviewable by petition under 37 C.F.R. § 1.181 and thus is not within the jurisdiction of the Board. *See In re Mindick*, 371 F.2d 892, 894 (CCPA 1967).

ISSUES

The issues before us include whether the Appellants have shown that the Examiner erred in rejecting claims 1-6 for failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph. This issue turns on whether the disclosure of Appellants' Specification and figures fails to enable a "second passage [that] is closed to prevent fluid flow through the second fluid passage."

The issues before us also include whether the Appellants have shown that the Examiner erred in rejecting claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Vermolen and de Molina. This issue turns on whether the cited references teach first and second passages configured as claimed by Appellants.

FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence.

1. Appellants' Specification describes several embodiments of an air adjustment valve for an air pressure proportional damper. (*See* Spec. 6, ¶ [0019]; *id.* at 10, ¶ [0027]; *id.* at 12, ¶ [0031].) According to the Appellants, claim 1 is directed to the embodiment shown in Figures 4 and 5. (Appellants' Reply Brief, dated March 7, 2008 (Reply Br.) 2.)

2. Figure 4 of Appellants' Specification is reproduced below:

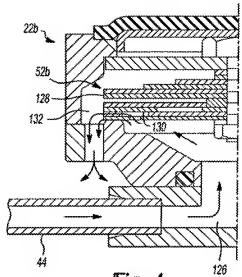

Fig-4

Figure 4 depicts a cross sectional view of a portion of an air adjustment valve 22b for an air pressure proportional damper. (Spec. 4, ¶ [0012].)

3. Paragraph 31 of Appellants' Specification describes the embodiment shown in Figure 4 as follows:

> In Figure 4, down tube 44 enters a bottom chamber 126 of an air adjustment valve 22b. A lower membrane 52b comprises a plurality of flexible plates 128. Within two of bottom plates 128 of lower membrane 52b is a first fluid passage 130. Passage 130 allows a small amount of fluid to pass from bottom chamber 126 into a chamber 132 to be communicated out to outlet 116. As a result, during small and low flow rates, passage 130 is sufficient to allow venting of fluid from bottom chamber 126 to chamber 132. However, as the fluid flow increases, passage 130 is insufficient to handle the volumetric flow rate of fluid, from bottom chamber 126 to outlet 116. Therefore, lower membrane 52b flexes to open a second fluid passage or flow path to allow sufficient fluid flow.

(Spec. 12, ¶ [0031] (as amended March 7, 2007).)

4. Figure 5 of Appellants' Specification is depicted below:

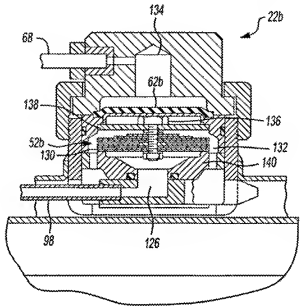

Figure 5 is a cross sectional view of the entire air adjustment valve 22b, a portion of which is depicted in Figure 4. (Spec. 13, ¶ [0032].)

5. Paragraph 32 of the Specification describes Figure 5 as follows:

> Referring now to Figure 5, the entire air adjustment valve 22b is shown and described. Here, air from hose 68 is fed to a chamber 134 that is positioned above and in fluid communication with an upper membrane 62b. As a result, upper membrane 62b presses against a bolt 136 and a plate 138 to thereby press lower membrane 52b against a support 140. As a result, the resistance that lower membrane 52b provides against fluid flow from bottom chamber 126 is directly proportional to the air pressure supplied through hose 68. Thus, air adjustment valve 22b controls the damping characteristics for damper 20 in a manner similar to air adjustment valve 22.

(Spec. 13, ¶ [0032].)

6. Therefore, the Specification discloses a second passage that is created between the flexed lower membrane 52b and support 140 during high fluid flow conditions.

7. Vermolen discloses a shock absorber that has a valve for variably controlling the damping characteristics of the shock absorber. (Vermolen, col. 2, ll. 6-8.) Figure 3 of Vermolen is depicted below:

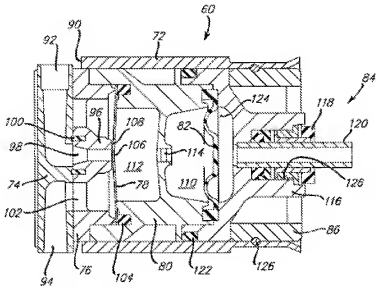

Figure 3 depicts Vermolen's variable control valve 60. (Vermolen, col. 2, ll. 46-47.) Fluid from the upper working chamber 42 (the upper portion of the cylinder containing the shock absorber piston) enters the valve through aperture 92. (*See id.*, col. 6, ll. 57-60; figs. 2, 3.) The fluid then passes through aperture 98 in annular projection 96, then past restriction 108, then out of the valve via chamber 102 and aperture 94, and on to fluid reservoir 48 (the chamber surrounding the cylinder 34 containing the piston). (*Id.*, col. 6, ll. 59-61; figs. 2, 3.)

8. In Vermolen's valve, the annular projection 96 and a shim disc 78 defines the restriction 108. (Vermolen, col. 5, ll. 21-24.) There is a hole 106 in the shim disc 78. (*Id.*, col. 5, ll. 17-18.) Two interconnected, oil-filled chambers 110 and 112 are located between the shim disc 78 and membrane 82. (*Id.*, col. 5, ll. 24-28.) Air supplied through tube 120 acts upon the chambers 110 and 112, thereby causing movement of the shim disc

78, which, in turn, changes the size of restriction 108. (*Id.*, col., 5, ll. 43-62.) The size of the restriction 108 is controlled, in part, by the size of the hole 106. (*Id.*, col. 5, ll. 29-32.) The damping characteristics of the shock absorber are controlled by the size of the restriction 108. (*Id.*, col. 6, l. 65 – col. 7, l. 5.)

9. The de Molina reference discloses a suspension damping system incorporating pneumatic controls. (de Molina, col. 1, ll. 7-12.)

PRINCIPLES OF LAW

The United States Patent and Trademark Office (the PTO) bears the initial burden when rejecting claims for lack of enablement.

> When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application; this includes, of course, providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement. If the PTO meets this burden, the burden then shifts to the applicant to provide suitable proofs indicating that the specification is indeed enabling.

In re Wright, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993) (citing *In re Marzocchi*, 439 F.2d 220, 223-24 (CCPA 1971)).

The test for compliance with the enablement requirement is whether the disclosure, as filed, is sufficiently complete to enable one of ordinary skill in the art to make and use the claimed invention without undue experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). Some experimentation, even a considerable amount, is not "undue" if, e.g., it is merely routine, or if the specification provides a reasonable amount of

guidance as to the direction in which the experimentation should proceed. *Id.* (quoting *Ex parte Jackson*, 217 USPQ 804, 807 (Bd. App. 1982)). The "undue experimentation" analysis involves the consideration of several factors, including: (1) the quantity of experimentation; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *Id.* at 737.

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1734 (2007) (quoting 35 U.S.C. § 103). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); *see also KSR Int'l Co.*, 550 U.S. at ___, 127 S. Ct. at 1734 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.").

ANALYSIS

The Rejection of Claims 1-6 Under 35 U.S.C. § 112, First Paragraph, for Failing to Comply with the Enablement Requirement

Claim 1 recites two separate passages between the first and second chambers. The first passage is an aperture extending through the membrane which allows some fluid flow between the chambers when the membrane is in a "second position." (Claim 1.) When the membrane is in this second position, the second passage is "closed to prevent fluid flow through the second fluid passage." (*Id.*) The membrane is in a "first position" when the second passage is open. (*Id.*)

The Examiner found that the Specification does not state that the membrane – when in the second, or closed, position – prevents fluid flow through the second fluid passage. (Ans. 4.) The Examiner also found that "[i]t is unclear where this second passage is in the drawings." (*Id.*) Appellants assert that a second passage is disclosed as the passage between lower membrane 52b and support 140. (Reply Br. 2.)

The amended Specification, referencing Figure 4, identifies the first passage as passage 130 through lower membrane 52b. (Fact 3.) The Specification explains that the lower membrane 52b is pressed against the support 140 in response to a pressure signal from the air spring. (*See* Fact 5.) The Specification further explains that the membrane flexes during periods of increased fluid flow and opens a second passage. (Fact 3.) Therefore, the Specification discloses the recited second passage as the passage created between the flexed lower membrane 52b and support 140 during high fluid flow conditions. (Fact 6.)

The Examiner suggests that the depiction in Figure 4 of two flow path arrows indicates that the closed membrane does not prevent flow through

either passage. (Ans. 7.) We acknowledge that Appellants have injected some ambiguity by the inclusion of the two arrows in a figure that appears to show the membrane in a closed position. However, any confusion on the part of the ordinary artisan is offset by the Specification's description of the membrane's operation (*see* Facts 2-5). The first passage in the membrane allows a small amount of fluid to pass between the chambers when the membrane is in the closed position, and the membrane flexes to open the second passage when the first passage is insufficient to accommodate an increased flow rate. (Fact 3.) This indicates that the second passage is closed and not passing fluid during low flow conditions. (*See* Fact 3.) Additionally, the Specification describes the lower membrane 52b being pressed against the support 140 in response to an air pressure signal, suggesting that the passage between the membrane and the support is closed. (*See* Fact 5.)

The Examiner also contends that the Specification lacks such specifics as the spring constant and other physical parameters to indicate that the membrane remains closed and prevents flow, and that it is "notoriously well known in the art that fluid often seeps between the spring discs and the land[.]" (Ans. 8.) However, the Examiner has not adequately addressed the *Wands* factors or otherwise explained why one of ordinary skill in the art would have to engage in undue experimentation to practice the claimed invention. For example, the Examiner does not discuss the level of ordinary skill or whether extensive experimentation would be required to determine the appropriate parameters necessary to prevent fluid flow. Therefore, the Examiner has failed to establish a prima facie case of non-enablement of

claim 1, and of claims 2 through 6, which depend directly or indirectly from claim 1.

The Rejection of Claims 1-6 Under 35 U.S.C. § 103(a) as Being Unpatentable over Vermolen and de Molina

Appellants argue that the cited references do not disclose two separate passages between a first and a second chamber, and do not disclose a first passage between the two chambers extending through the membrane. (Appellants' Appeal Brief, dated Oct. 2, 2007 (App. Br.) 12.) As discussed above, claim 1 recites that, when the membrane is in a second position, the second passage is closed while the first passage allows some fluid to flow between the chambers via an aperture through the membrane.

The Examiner found that Vermolen discloses several possible passages (Ans. 5-6, 8-9), but appears to concede that Vermolen lacks a passage closed to prevent fluid flow (*see* Ans. 6; *see also Lemmens*, 2006 WL 3101723, at *5, slip op. at 11 (the Board previously finding that Vermolen "does not describe fluid passage restriction 108 to be closed")). The Examiner relies upon de Molina for the teaching of a closed passage between de Molina's flexible discs 136 and land 160. (*See* Ans. 6 (referring to de Molina's figure 4).) However, the Examiner also acknowledges that de Molina never states that the discs actually contact the land. (*Id.*) Rather, the Examiner asserts that "presumably this [contact] could happen with enough 'control pressure' applied to chamber 158 to stiffen the damping characteristics of the absorber for a particular application." (*Id.*)

Even if we accept the speculative assumption that the combined teachings disclose closing a passage via a movable membrane, the Examiner has not identified in Vermolen two separate passages between two chambers

where one passage remains open when the other is closed. For example, the Examiner found that a first passage through the valve could be from Vermolen's upper working chamber via the aperture 92, through the restriction 108 (between the shim disc 78 and the land on annular projection 96), and then out of the valve through chamber 102. (Ans. 9.) The Examiner found a corresponding second passage that is the same as the first except the fluid travels into chamber 112 through the hole 106 in the shim disc 78 and then back out again through the same hole 106 before exiting the valve via the restriction between the shim disc and the land. (*Id.*) Assuming *arguendo* that these constitute two separate passages within the meaning of the claimed invention, both passages would be closed when the disc contacts the land. Thus, the Examiner has failed to point to a first fluid passage that allows fluid to flow through the valve from the first chamber to the second when the membrane is in the closed position. Additionally, we disagree with the Examiner's suggestion that a second passage exists when the fluid flows in the reverse direction through a first passage (Ans. 9).

In view of the foregoing, we are constrained to reverse the rejection of independent claim 1. We also reverse the rejection of claims 2-6, which depend directly or indirectly from claim 1.

CONCLUSIONS

We conclude that Appellants have shown that the Examiner erred in rejecting claims 1 through 6 for failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph, and in rejecting claims 1 through 6 under 35 U.S.C. § 103(a) as being unpatentable over Vermolen and de Molina.

DECISION

The decision of the Examiner to reject claims 1 through 6 is reversed.

REVERSED

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